
**Improvements to
San Tin Interchange
(Contract No. HY/2004/09)**

**Monthly Environmental
Monitoring & Audit Report**

Report No. 2

July 2005

ATKINS

1	Environmental Status	1
1.1	Works undertaken during the Reporting Period.....	1
1.2	Environmental Permit and Licences.....	1
1.3	Environmental Document Submissions to EPD	1
1.4	Environmental Monitoring Locations	1
2	Environmental Measures and Implementation Status	2
3	Monitoring Results	2
3.1	Noise Monitoring.....	2
3.2	Water Quality Monitoring	3
3.3	Landscape & Visual Resources	3
3.4	Ad-hoc Air Quality Monitoring	3
3.5	Waste Management	3
4	Environmental Audits	4
4.1	Site Inspection and Audit	4
4.2	Environmental Exceedances	4
4.3	Environmental Complaint and Prosecution	4
5	Forecast and Schedule	4
5.1	Key Issues for the Coming Months.....	4
5.2	Monitoring Schedules for the Next Month	5
6	Conclusion	5

List of Annexes

Annex A	Contractor's Works Programme
Annex B	Mitigation Measures Checklist
Annex C	Calibration Certificates
Annex D	Noise Monitoring Results
Annex E	Water Quality Visual Inspection Reports
Annex F	Landscape & Visual Resources Monthly Inspection Report
Annex G	Weekly Site Inspection Reports
Annex H	Action and Limit Levels
Annex I	Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

List of Tables

Table 1.1	Status of Permits and Licences in July 2005
Table 1.2	Summary of Environmental Submissions Specified in the Project EP
Table 1.3	Noise Monitoring Stations
Table 3.1	Summary of Noise Monitoring Results
Table 3.2	Summary of Waste Disposal for July 2005
Table 5.1	Noise Monitoring Schedule for August 2005

List of Figures

Figure 1	Site Plan & Locations of Noise and Air Quality Monitoring Stations
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Executive Summary

Atkins China Limited (ACL) has been appointed by Chun Wo Construction & Engineering Co., Ltd. to implement the Environmental Monitoring and Audit (EM&A) programme for the construction works under Contract No. HY/2004/09 Improvements to San Tin Interchange (hereinafter, the Project).

The construction of the Project commenced on 21st June 2005. This report is the second monthly EM&A report for the Project which summarises the monitoring results and audit findings during the reporting period from 1st to 31st July 2005.

Environmental Monitoring and Audit Progress

The monthly EM&A programme was undertaken in accordance with the EM&A Manual. A summary of the monitoring activities in this reporting month is listed below:

- Site inspections were undertaken jointly with the Contractor, Engineer Representative (ER) on 7th, 14th, 21st & 28th July 2005. The Independent Environmental Checker (IEC) joined the site inspection on 28th July 2005.
- Noise monitoring at three designated monitoring stations was undertaken on 6th, 13th, 18th & 30th July 2005.
- Visual site surveillance inspections for water quality were undertaken 3 days per week. During the inspections, it was seen that the Contractor has taken pre-emptive measures to minimize the water quality impacts, including provision of sandbag barriers and sedimentation facilities at all pre-drilling sites for treatment of the drilled water and prevent surface runoff. No significant water quality impacts were observed.
- Site inspection for landscape and visual resources were undertaken on 9th and 28th July 2005.

Breaches of Action and Limit Levels

There were no environmental exceedances recorded during this reporting month.

Complaint Log

There were no environmental complaints received during this reporting month.

Notifications of Summons and Prosecutions

There were no notifications of summons or prosecutions received during this reporting period.

Reporting Changes

This report has been developed in compliance with the reporting requirements for the subsequent monthly EM&A reports as required by the Project EM&A Manual.

Future Key Issues

Pre-drilling works for bored piles of Slip Roads E and F will continue in August 2005.

1 ENVIRONMENTAL STATUS

1.1 Works undertaken during the Reporting Period

The major construction activities undertaken during this reporting period are summarised below:

- Installation of site hoardings;
- Pre-drilling works;
- Laying of drainage pipes;
- Commencement of bored piling works; and
- Implementation of temporary traffic arrangement schemes;

The site plan of the Project is shown in Figure 1. The Contractor's works programme is provided in Annex A.

1.2 Environmental Permit and Licences

There were no changes or clarification to the Environmental Permit (EP-190/2004) during the reporting period.

Two Construction Noise Permits (CNP) and also Water Discharge Licence were issued in July 2005. The status of the permits / licenses is summarised in Table 1.1.

Table 1.1 Status of Permits and Licences in July 2005

Permit / License	Reference No.	Issue Date	Expiry Date
Construction Noise Permit	GW-RN0312-05	12th July 2005	11th January 2006
Construction Noise Permit	GW-RN0313-05	12th July 2005	11th January 2006
Water Discharge License	1S69/1	4th July 2005	31st July 2010

The Contractor has been registered as a chemical waste producer.

1.3 Environmental Document Submissions to EPD

A summary of the status of the submissions specified in the Project EP as provided during the month of July 2005 is presented in Table 1.2. A Drainage Management Plan, prepared as per the requirements of the EM&A Manual, was submitted to EPD on the 5th July 2005.

Table 1.2 Summary of Environmental Submissions Specified in the Project EP

Item No.	Document Title	Date of Submission
1	Monthly EM&A Report No. 1 for June 2005	14th July 2005

1.4 Environmental Monitoring Locations

Noise monitoring was undertaken at three monitoring stations and the locations are shown on Figure 1. Description of these monitoring stations is provided in Table 1.3.

Table 1.3 Noise Monitoring Stations

Monitoring Station ID	Description	Easting	Northing
CM1	Village house near San Tin Highway	826133	839839
CM2	Village house near San Tin Highway	826291	839918
CM3	Village house near Kwu Tung Road	826605	840076

2 ENVIRONMENTAL MEASURES AND IMPLEMENTATION STATUS

The mitigation measures listed in the Project EIA Report, EM&A Manual and Environmental Permit and the implementation status are provided in Annex B. Based on the site inspection findings, it appears that the Contractor has implemented the required mitigation measures during construction works to date.

The Contractor has also implemented pre-emptive mitigation measures to control the potential water quality impacts. Sandbag barriers and sedimentation facilities were provided at all pre-drilling sites for treatment of the soil-laden drilled water and prevent surface runoff. No significant water quality impacts were observed.

3 MONITORING RESULTS

3.1 Noise Monitoring

3.1.1 Noise Monitoring Equipment

The details of the noise monitoring equipment are listed below and the calibration certificates are presented in Annex C:

- Sound level meter ONO-SOKKI LA-5110
- Acoustical calibrator ONO-SOKKI SC-2110
- Hand-held anemometer

3.1.2 Noise Monitoring Methodology

The sound level meter was calibrated with an acoustical calibrator prior to each measurement. It was set on a tripod at 1.2 m above local ground level at the monitoring station. Measurement of the A-weighted $L_{eq(30 \text{ minutes})}$ noise level was undertaken. Wind speed was checked during the monitoring period using the hand-held anemometer to ensure steady wind speed did not exceed 5 m/s, or gusts did not exceed 10 m/s. After the noise measurement the sound level meter was re-calibrated using the acoustical calibrator.

3.1.3 Noise Monitoring Results

Noise monitoring results obtained in July 2005 are summarised in Table 3.1. There were no exceedances of the Action and Limit Levels for noise monitoring in the reporting period. Details of the monitoring time period and weather condition during the monitoring period and the graphical presentation of the noise monitoring results are provided in Annex D.

Table 3.1 Summary of Noise Monitoring Results

Date of Monitoring	Daytime Noise Monitoring Results $L_{eq(30\text{ minutes})}$ noise		
	CM1	CM2	CM3
6th July 2005	67.9	71.9	61.7
13th July 2005	66.7	72.3	64.0
18th July 2005	66.5	71.9	64.3
30th July 2005	72.4	71.7	*

Remark: * Noise monitoring at Station CM3 was cancelled due to adverse weather conditions.

No construction works were undertaken during the restricted hours during the reporting period. Therefore, no noise monitoring was undertaken during the restricted hours in July 2005.

3.2 Water Quality Monitoring

Visual site surveillance inspections for water quality were undertaken for 3 days each week. Based on the visual inspection results, some minor improvements to the drainage and sedimentation facilities were recommenced and corrective activities were undertaken by the Contractor. No non-compliance was observed. The details the inspection reports are provided in Annex E.

3.3 Landscape & Visual Resources

Site inspection on the landscape & visual resources was undertaken two times (9th and 28th July, 2005) during July 2005. The implementation of the mitigation measures was found to be in compliance. The details of the inspections are summarized in Annex F.

3.4 Ad-hoc Air Quality Monitoring

No ad-hoc air quality monitoring was undertaken during the reporting month.

3.5 Waste Management

The Contractors have adopted a trip ticket system for the disposal of construction wastes. According to the records provided by the Contractors, the disposal of construction waste within the reporting month are summarised in the Table 3.2.

Table 3.2 Summary of Waste Disposal for July 2005

Waste Type	Destination	No. of Trips	Quantity
C & D Waste	NENT	19	95 m ³
C & D Waste	WENT	2	10 m ³
Building debris	CEDD Tuen Mun Area 38 Fill Bank	1	5 m ³
Chemical Toilet Waste	Collected by Proenvironmental Services Ltd.	12	-
Sewage Holding Tank	Collected by Waylung Waste Services Ltd.	4	-

4 ENVIRONMENTAL AUDITS

4.1 Site Inspection and Audit

Site inspections were undertaken on 7th, 14th & 21st July 2005, and jointly with the IEC, on 28th July 2005. Specific locations within the site were identified during the inspection for improvements in proper implementation of the environmental mitigation measures. These include:

- Unpaved access path along San Sham Road was observed to be dry and dusty due to insufficient water spraying.
- Insufficient tarpaulin coverage for the stockpile at N1 open lay-down area.
- Some sediment laden surface runoff was observed at the pre-drilling works area along N2 division works area and behind the stockpile storage area at N1 open lay-down area.
- Insufficient provision of sandbags encircling the transplantation nursery near the site office. Soil laden wash-down could escape into the ditch nearby.

The record of the weekly site inspection findings is provided in Annex G. Following the environmental inspections, recommendations for corrective measures were made. The Contractor has undertaken remedial actions accordingly to improve the implementation of mitigation measures.

4.2 Environmental Exceedances

During the reporting period, there were no exceedances of Action and Limit Levels recorded. The Action and Limit Levels for impact monitoring are provided in Annex H.

4.3 Environmental Complaint and Prosecution

No environmental complaints and no prosecution or summons were received during the reporting period. Cumulative statistics on complaints, notifications of summons and successful prosecutions for the Project are provided in Annex I.

5 FORECAST AND SCHEDULE

5.1 Key Issues for the Coming Months

The key issues with respect to the works in the forthcoming 2 months include:

- Pre-drilling works;
- Temporary works: platform formation works;
- Bored piles construction;
- Temporary support works;
- Demolition of existing NB-Wall;
- Subway extension;
- Band drains installation; and
- Drainage pipe laying.

5.2 Monitoring Schedules for the Next Month

The schedule for noise monitoring in August 2005 is provided in Table 5.1 below:

Table 5.1 Noise Monitoring Schedule for August 2005

Date	Noise Monitoring Station
3rd August 2005 (Wednesday)	CM1, CM2 & CM3
11th August 2005 (Thursday)	CM1, CM2 & CM3
17th August 2005 (Wednesday)	CM1, CM2 & CM3
24th August 2005 (Wednesday)	CM1, CM2 & CM3
31st August 2005 (Wednesday)	CM1, CM2 & CM3

6 CONCLUSION

There was no environmental non-compliance identified that was attributable to the Project works during the reporting period. Also, no environmental complaint, prosecution or summons was received during the reporting period. Mitigation Measures stated in the Project EIA have been implemented.